CLAIM LISTING

The following listing of claims does not contain any amendments and is provided for the Examiner's convenience.

LISTING OF CLAIMS

1. (Cancelled).

2. (Previously Presented) The control system of claim 17 wherein the switching circuit includes:

a plurality of transistors coupled to the motor and the voltage source; and

a control module coupled to the transistors.

3. (Original) The control system of claim 2 wherein the control module selectively enables the transistors such that each phase of the motor has a phase turn on point that occurs before a phase turn off point of a preceding phase.

4. (Original) The control system of claim 2 wherein the control module pulse width modulates the transistors such that the DC bus current is regulated to the fixed level.

5. (Original) The control system of claim 4 wherein the inverter further includes a current measurement device for measuring the DC bus current, the control module pulse width modulating the transistors based on the measured DC bus current.

6. (Original) The control system of claim 5 wherein the current measurement device includes a resistor connected in series with a negative rail of the voltage source, the control module pulse width modulating the transistors based on a voltage drop across the resistor.

7. (Previously Presented) The control system of claim 17 wherein the motor is a three-phase DC motor.

8. (Original) The control system of claim 7 wherein the DC motor is a brushless motor.

9. (Cancelled).

10. (Previously Presented) The inverter of claim 18 further including a measurement resistor connected in series with a negative rail of a voltage source, the control module pulse width modulating the transistors based on a voltage drop across the measurement resistor.

11. (Previously Presented) The inverter of claim 18 wherein the motor is a three-phase DC brushless motor.

12. (Cancelled).

13. (Previously Presented) The method of claim 19 further including the step of selectively enabling a plurality of transistors such that each phase of the motor has a phase turn on point that occurs before a phase turn off point of a preceding phase, the transistors being coupled to a voltage source and the motor.

14. (Previously Presented) The method of claim 19 further including the step of pulse width modulating a plurality of transistors such that the DC bus current is regulated at the fixed level.

15. (Original) The method of claim 14 further comprising the steps of:

measuring the DC bus current; and

comparing the measured DC bus current to the fixed level.

16. (Original) The method of claim 15 further including the step of measuring a voltage drop across a resistor in series with a negative rail of the DC bus.

17. (Previously Presented) A control system for a motor including a plurality of phases, comprising:

a voltage source for providing a DC bus current; and

an inverter having a switching circuit for regulating the DC bus current to a fixed current level,

wherein the switching circuit defines alternating overlapping periods and non-overlapping periods and delivers the fixed current level to one of the phases during the non-overlapping periods, and

wherein the switching circuit supplies a decreasing current level to a first phase and an increasing current level to a second phase during an overlapping period such that said first and second phases share the fixed current level and a sum of current that is supplied to said first phase and said second phase is substantially equal to said fixed current level.

18. (Previously Presented) An inverter for a motor control system, the inverter comprising:

a plurality of transistors;

a control module for selectively enabling the transistors such that each phase of the motor has a phase turn on point that occurs before a phase turn off point of a preceding phase,

wherein said control module pulse width modulates the transistors such that the DC bus current is regulated to a fixed current level,

wherein the control module defines alternating overlapping periods and non-overlapping periods and delivers the fixed current level to one of the phases during the non-overlapping periods, and

wherein the control module supplies a decreasing current level to a first phase and an increasing current level to a second phase during an overlapping period such that said first and second phases share the fixed current level and a sum of current that

is supplied to said first phase and said second phase is substantially equal to said fixed current level.

19. (Previously Presented) A method for controlling a motor including a plurality of phases, comprising:

providing a DC bus current;

regulating the DC bus current to a fixed current level;

defining alternating overlapping periods and non-overlapping periods;

delivering the fixed current level to one of the phases during the non-overlapping periods; and

supplying a decreasing current level to a first phase and an increasing current level to a second phase during an overlapping period such that said first and second phases share the fixed current level and a sum of current that is supplied to said first phase and said second phase is substantially equal to said fixed current level.